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47. (Amended) A data analysis system, comprising:

- 2 a memory for storing discrete cosine transform equations having been formed by
- 3 arranging the discrete cosine transform equations into at least one collection having at
- 4 least two discrete cosine transform constants, scaling the discrete cosine transform
- 5 equations in the at least one collection by dividing each of the discrete cosine transform
- 6 constants in the collection by one of the discrete cosine transform constants from the at
- 7 least one collection and representing each of the scaled discrete cosine transform
- 8 constants with estimated scaled discrete cosine transform constants approximated by
- 9 sums of powers-of-2; and
- 10 a transformer for applying the transform equations to perform a discrete cosine
- 11 transform to decorrelate data into discrete cosine transform coefficients.